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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,820	11/20/2001	Michael Pittroff	173/50483	8696

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EXAMINER

SPITZER, ROBERT H

ART UNIT PAPER NUMBER

1724

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/988,820

Applicant(s)
Michael Pittroff et al.

Examiner
Robert H. Spitzer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 17, 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 7 is again rejected under 35 U.S.C. 102(e) as being clearly anticipated by the structure of Tamata et al. (6,004,377). Note in particular the fourth embodiment, at col. 13, line 38 through col. 14, line 57, and Figs. 7 and 8.
3. Claims 1,3, and 4 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (5,785,741) in view of Sanders, Jr. et al. and Li et al. (5,855,647). The claims differ from the process of Li et al. ('741) in specifying the specific glassy membrane used to separate the SF₆ and N₂, and in the specific amount of SF₆ being between 5 and 50 vol. %. Sanders, Jr. et al. show the specific glassy membrane being recited in claim 1. Li et al. ('647) show that the SF₆ can be in an admixture with SF₆ up to 20 vol. % and still be separated by membrane permeation of the N₂. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize the specific membrane of Sanders, Jr. et al. as the separation membrane in Li et al. ('741), as one glassy polymer membrane would be expected to function in place of another such membrane, and to have the SF₆ be present in an amount up to 20 vol. % in the gas mixture of Li et al. ('741), in view of the showing of Li et al. ('647) that such gas mixtures can be separated through a membrane permeation stage.

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4. Claims 2,5, and 6 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. ('741) in view of Sanders, Jr. et al. and Li et al. ('647), as applied in the paragraph directly above, further in view of Tamata et al. ('377). The claims differ from the process of modified Li et al. ('741) in the gas mixture source being a gas enclosure. Tamata et al. ('377) show that SF₆ gas from a gas enclosure can be separated by use of a membrane permeation step. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize the process of modified Li et al. ('741) to treat a gas mixture containing SF₆ obtained from a gas enclosure, in view of the showing of Tamata et al. ('377).

5. Applicant's arguments filed June 17, 2002 have been fully considered but they are not persuasive. With respect to claim 7 and the Tamata et al. ('377) reference, Applicants are mistaken in their view of the disclosure of this reference because it is the fourth embodiment thereof, which utilizes a membrane permeation step, as is evidenced by Figs. 7 and 8, as well as col. 13, line 37 through col. 14, line 57, and col.3, lines 26-29, wherein the portability and small size of the device are also discussed. That is all that is necessary to meet this broad claim. As to the claims involving the Li et al. ('741) reference as the primary reference, the reference disclose the use of glassy polymer membranes to separate SF₆ and N₂ but places no limitations on which glassy polymer is used to perform the separation of SF₆ and N₂. Thus, the glassy membranes of the reference to Sanders, Jr. et al. would be available as they are taught to separate N₂ from other gases because of its molecule size. As the molecular size of N₂ is much smaller than the size of SF₆, as pointed out by Applicants in their response, the expectation would be that the glassy

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membrane of Sanders, Jr. et al. would allow the smaller molecule (N₂) to permeate over the larger molecule (SF₆). With respect to the reference to Li et al. ('647), its sole purpose is to show that glassy polymer membranes will separate SF₆ with a concentration of up to 20 vol. % from its admixture with gases such as N₂ and that is what it shows. Any other remarks made by Applicants and not specifically commented on by the Examiner, have been considered.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H. Spitzer whose telephone number is (703) 308-3794. The examiner can normally be reached on Monday-Thursday from 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons, can be reached on (703) 308-1972. The fax phone number for the organization

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where this application or proceeding is assigned is (703) 872-9310 and for After Final communications the fax number is (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Robert H. Spitzer

June 27, 2002

Robert H. Spitzer

ROBERT H. SPITZER
PRIMARY EXAMINER

T.C. 1700

June 27, 2002